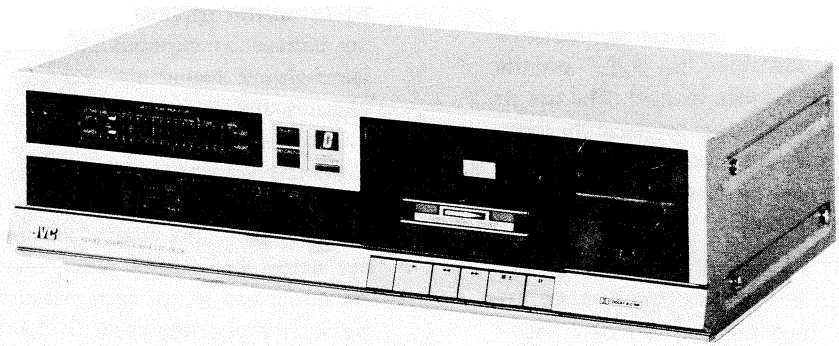
JVC

SERVICE MANUAL

STEREO CASSETTE DECK

MODEL KD-X2 A/B/C/E/ G/J/U



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No. 4250
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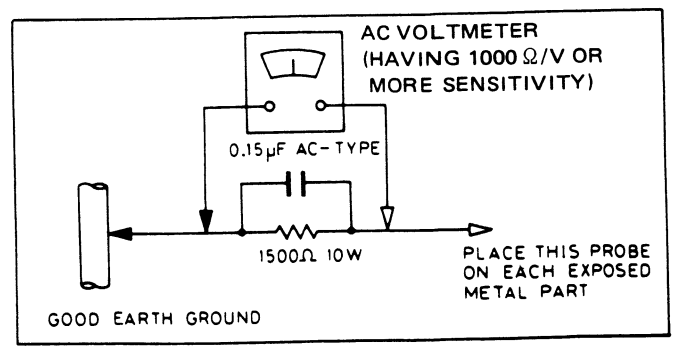
Safety Precaution

1. The design of this product contains special hardware. Many circuits and components specially for safety purposes.
   For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by then necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. Electrical components having such features are identified by (⚠) on the schematics and parts list in Service manual. The use of a substitutue replacement which does not have the same safety characterisitics as the recommended replacement part shown in the parts list in Service manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings barriers and/or the like to be separated from live parts, high temperature part, moving parts and/or sharp edges for the prevention of electric shock and fire hazard.
   When service is required, the original lead routing and dress should be observed, and they should be confirmed to be returned to normal, after re-assembling.
5. Leakage current check
   (Safety for electrical shock hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the Products (antenna terminals, knobs, metal cabinet, screw heads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc,). Any leakage current must not exceed 0.5 mA AC (r.m.s.).
   - Alternate check method.
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or mroe sesitivity in the following manner. Connect a 1500 Ω 10 W resistor paralleled by a 0.15 μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.).
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured musy not exceed 0.75 V AC (r.m.s.).
     This corresponds to 0.5 mA AC (r.m.s.).



Specifications

Type	: Stereo cassette deck
Track system	: 4-track, 2-channel
Tape speed	: 1-7/8 inch/sec (4.8 cm/sec)
Frequency response	
(0 dB recording)	: Metal tape; 40–11,000 Hz (±3 dB)
	Chrome tape; 40–8,000 Hz (±3 dB)
	Normal tape; 40–8,000 Hz (±3 dB)
(–20 dB recording)	: Metal tape; 40–15,000 Hz (±3 dB)
	Chrome tape; 40–15,000 Hz (±3 dB)
	Normal tape; 40–14,000 Hz (±3 dB)
S/N ratio	: 58 dB (S = 1 kHz, K3 = 3%, N = A-weighted, Metal tape) The S/N is improved by about 15 dB at 500 Hz, by max. 20 dB at 1 kHz – 10 kHz and the MOL is improved by 4 dB at 10 kHz with DOLBY C NR on and improved by 5 dB at 1 kHz and by 10 dB at above 5 kHz with DOLBY B NR on.
Wow and flutter	: 0.08% (WRMS), 0.20% (DIN 45 500)
Crosstalk	: 60 dB (1 kHz)
Harmonic distortion	: K3; 0.5%, THD; 1.0% (Metal tape, 1 kHz, 0 dB)
Heads	: METAPERM head for recording/playback 2-gap ferrite head for erasure
Motor	: Electronic governed DC motor
Fast forward time	: 100 sec with C-60 cassette
Rewind time	: 100 sec with C-60 cassette
Input terminals	
Mic jack x 2	: Max. sensitivity; 0.4 mV (–68 dBV) Matching impedance; 600 Ω–10 kΩ
Input jack x 2	: Min. input level; 80 mV Input impedance; 100 kΩ
Output terminals	
Output jack x 2	: Output level; 300 mV Output impedance; 5 kΩ
Power requirement	: AC 240 V, 50/60 Hz
Power consumption	: 10 W with power ON 0.8 W with power switch OFF
Dimensions	: W: 17-1/8" (435 mm) H: 4-9/16" (115 mm) D: 9-3/8" (237 mm)
Weight	: 7.7 lbs (3.5 kg)
Accessories	: Pin plug cord 2

Design and specifications are subject to change without notice.

Location of Main Parts

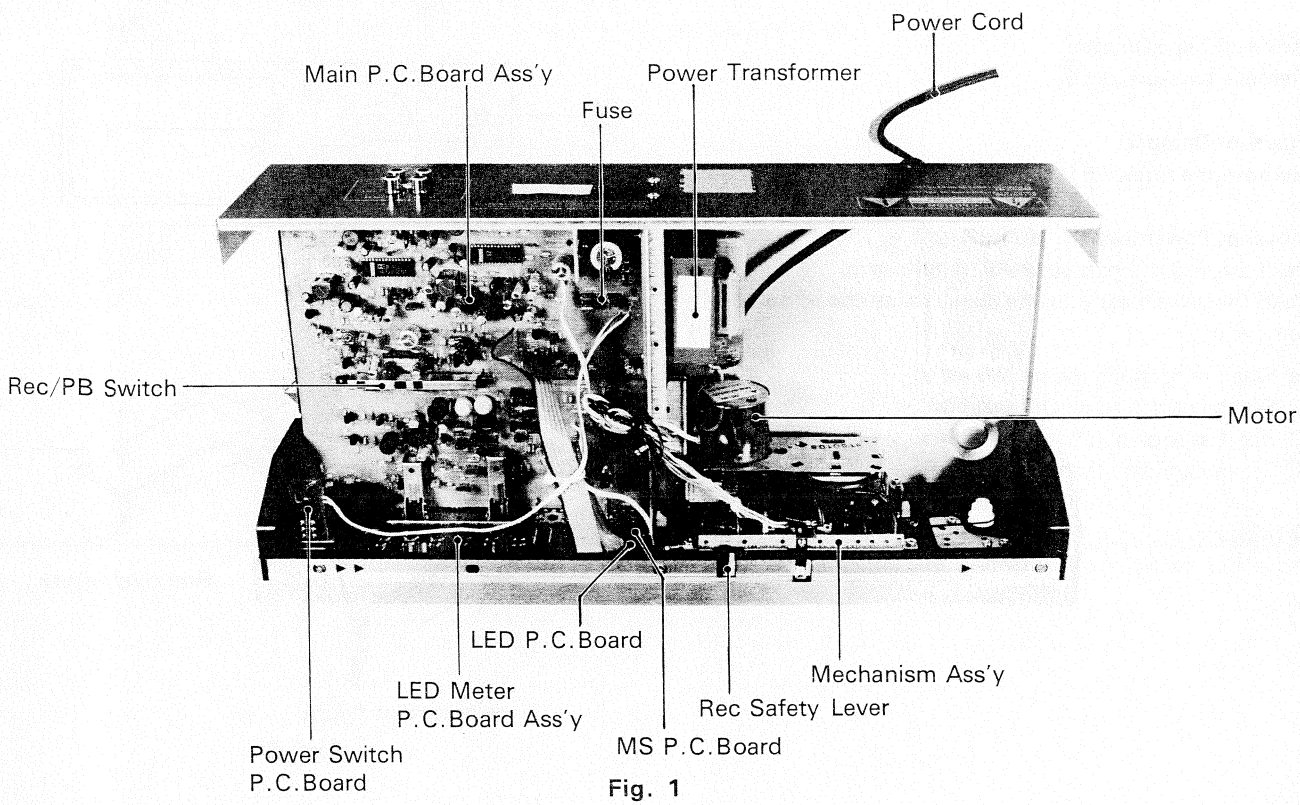


Fig. 1

Removal of Main Parts

Enclosure Section

■ **Removal of Top Cover**

1. Remove six screws retaining the both sides of the top cover.
2. Remove the screw retaining the back side of the top cover.

■ **Removal of Bottom Cover**

1. Remove three screws retaining the front side of the bottom cover.
2. Remove three screws retaining the rear side of the bottom cover.

■ **Removal of Rear Panel**

1. Remove three screws retaining the jack and chassis to the rear panel.

■ **Removal of Front Panel**

1. Remove the screw (1) retaining the left side of the front panel.
2. Remove the screw (2) retaining the bottom side of the front panel.
3. Remove the screw (3) retaining the earth wire with the mechanism ass'y.
4. Pull out two knobs.

■ **Removal of Mechanism Ass'y**

1. Remove the counter belt.
2. Remove three screws (4) retaining the mechanism ass'y.
3. Open the cassette door and remove the mechanism ass'y.

■ **Removal of Tape Counter**

1. Remove two screws (5).

■ **Removal of Damper**

1. Remove the screw (6).

■ **Removal of Power Switch (See Fig.5)**

1. Push the switch knob outward to remove it.
2. Push the switch ass'y in the direction of the arrow to remove it.

Note: When reinstalling the switch ass'y:
1) Set the switch to its ON position.
2) Fix it as shown in the right figure.
3) Set the knob to the switch.

■ **LED Indicator**

Remove five pawls (7) retaining the indicator board ass'y.

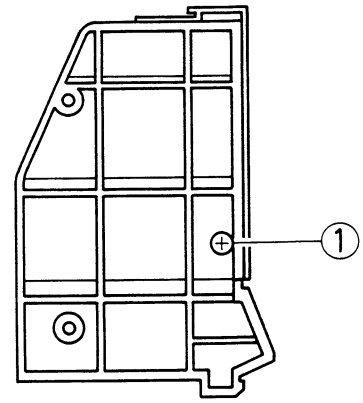


Fig. 2

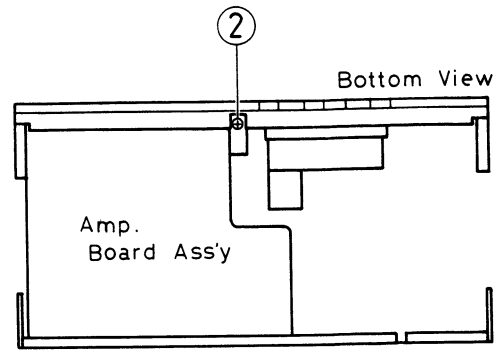


Fig. 3

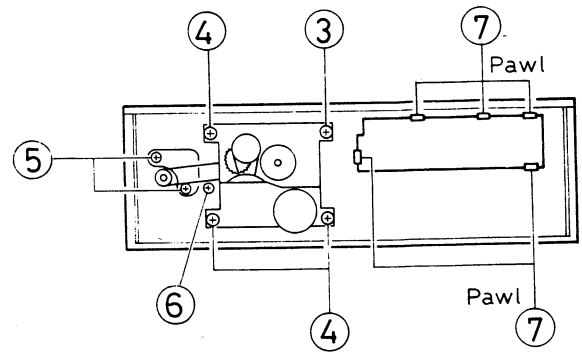


Fig. 4

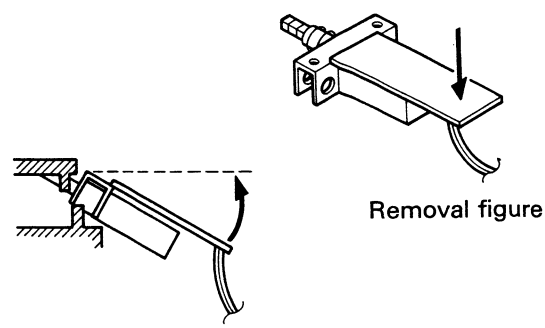


Fig. 5

Mechanism Section

Mechanical parts

- **Rec./PB head**
  1) Remove 2 screws (31) for the button assembly.
  2) Remove a screw (32) .
  3) Loosen a screw (33) for adjustment.
- **Erase head**
  1) Remove a screw (34) .
  2) Remove a screw (35) for adjustment.
- **Pinch roller arm assembly**
  1) Remove a stopper (36) holding its assembly, and pull it off from the shaft.
- **Supply reel disc assembly**
  1) Pull out the reel disc stopper (37) and remove its disc from the shaft.
- **Take-up reel disc**
  1) Pull out the reel disc stopper (38) and remove it from the shaft.

  Note: Remove the reel disc stoppers with a piece of sheet metal inserted between the reel disc and stopper, when assembling the reel disc, the stopper needs a new parts (the stopper cannot be used again).
- **Motor**
  1) Remove 3 screws (39) , (40) and (41) fastening the FM bracket. (When removing the FM bracket (42) , remove with the main belt (43) and the RF belt (44) .)
  2) Remove 3 screws (45) fastening the motor.
  3) Pull out the motor pulley from the motor shaft.

  Note: Be careful not to stain the main belt and RF belt. (When assembling the motor pulley, adjust the pulley position as next figure.)

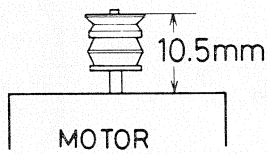


Fig. 6

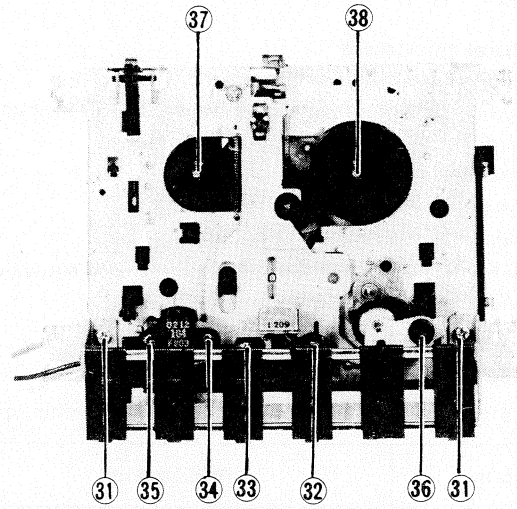


Fig. 7

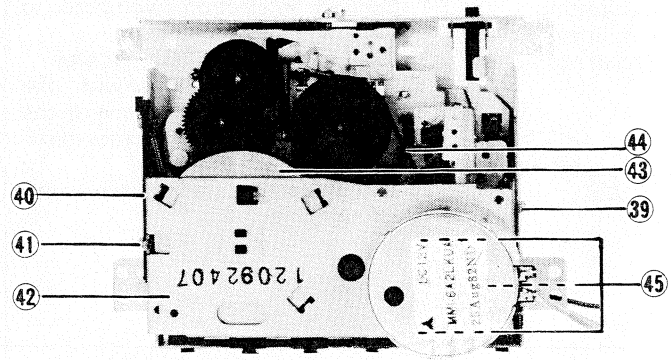


Fig. 8

- **Flywheel assembly**
  Pull out the flywheel from the capstan metal.

How to assemble the FM bracket and belts

1) Assemble full auto belt and RF belt as next figure.
2) Fasten 3 screws, to assemble the FM bracket.

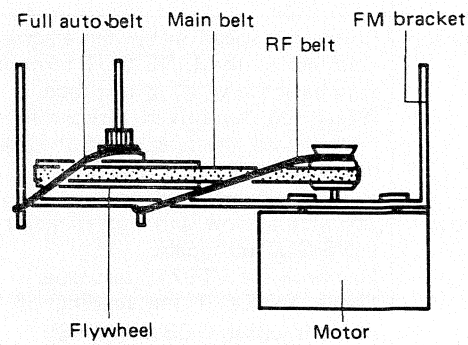


Fig. 9

Main Adjustment

[I] Equipment and measuring instruments used for adjustment

1. Electrical adjustment

1) Electronic voltmeter
2) Audio frequency oscillator (range: 50–20 kHz and output 0 dB with impedance 600 Ω)
3) Attenuator
4) Standard tapes for REC/PB

Maxell UD – Norom (SF) tape . . .
TDK SA – Chrome (SA) tape. . . . } – or equivalent
JVC ME – Metal tape . . . . . .

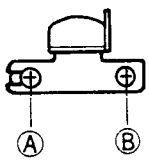
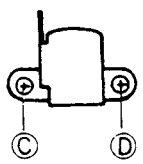
5) Reference tapes for playback (JVC Test Tape)
VTT703L (for head azimuth adj.)
VTT712 (for motor speed, wow flutter adj.)
VTT739 (for playback frequency response)
VTT724 (for playback lebel Adj)
6) Resistor 600 Ω (for attenuator matching)

2. Mechanical adjustment

1) Torque testing cassette gauge, CTG-N.

[II] Mechanical adjustment

(Adjust the mechanism or confirm that it is in normal operating condition prior to the adjustment of the electrical circuit.)

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting record/playback head position 	1. Connect an electronic voltmeter to the LINE OUT terminals. 2. Play back the VTT703L test tape. 3. Adjust the head angle with the screw Ⓐ until the reading of the electronic voltmeter becomes maximum for both channels. 4. After adjusting, set the screw with screw bond.	Screw Ⓐ	Maximum	If the head is worn, disconnected or exceedingly magnetized so as not to provide the necessary characteristics, replace it with a new one. After replacement, the head position adjustment as well as the playback level adjustment, the bias current adjustment and the recording level adjustment are all necessary. If the output difference between the left and right channels exceeds 3 – 4 dB, the head is defective. Replace it with a new one.
Adjustment erase head height 	1. Turn the adjusting screw for aligning the erase head until it stops. Then, turn the screw in the reverse direction by 180° (a ½ revolution). 2. Employ a special cassette (C-120) from which parts of the casing, where the erase head, record/playback head and capstan engage, has been cut away. Perform tape transport with the cassette tape. Adjust the screw Ⓒ until the tape runs in the center of the erase head tape guide.	Screw Ⓒ		Be sure to perform this adjustment after replacing the erase head. Correct Incorrect
Adjusting motor speed	Connect a speed meter (an electronic counter) to the LINE OUT terminals. Play back the VTT712 test tape. Adjust the semi-fixed resistor in the motor until the reading of the speed meter is 3000 Hz.	Semi-fixed resistor in the motor	3000 Hz ±50Hz	If the speed meter functions as a wow and flutter meter, also, connect the deck to the INPUT terminals of the meter.
Checking wow and flutter	Connect a wow and flutter meter to LINE OUT terminals. Play back the VTT712 test tape. Check to see if the reading of the meter is within 0.08% (WRMS).		0.08% (WRMS) 0.2% (DIN45500)	If the reading becomes moving value even if conforming to the standard, a re-claim may be raised. Repairs are necessary.
Checking playback torque	Employ a torque testing cassette tape for the checking, or remove the cassette cover and use a torque gauge.		40–70 gr-cm	If the standard torque is not obtained, replace the take-up disc assembly.

Item	Adjustment	Adjusting point	Standard value	Remarks
Checking fast forward torque	Measure the torque in the fast forward mode in the same manner as in the above.		More than 70 gr-cm	If the standard torque is not obtained, perform the following. 1. Clean the capstan belt, the idler circumference, the motor pulley, the take-up reel disc circumference, the flywheel circumference, etc. 2. Replace the belt and idler.
Checking rewind torque	Measure the torque in the rewind mode in the same manner as in the above.		More than 70 gr-cm	If the standard torque is not obtained, clean the capstan belt, idler, motor pulley, flywheel circumference, rewinding idler circumference, left reel disc circumference, etc.

[III] Electrical adjustments location

Main Amp. P.W. Board (parts assembly side view)

(Turning in the direction of the arrow increases the level.)

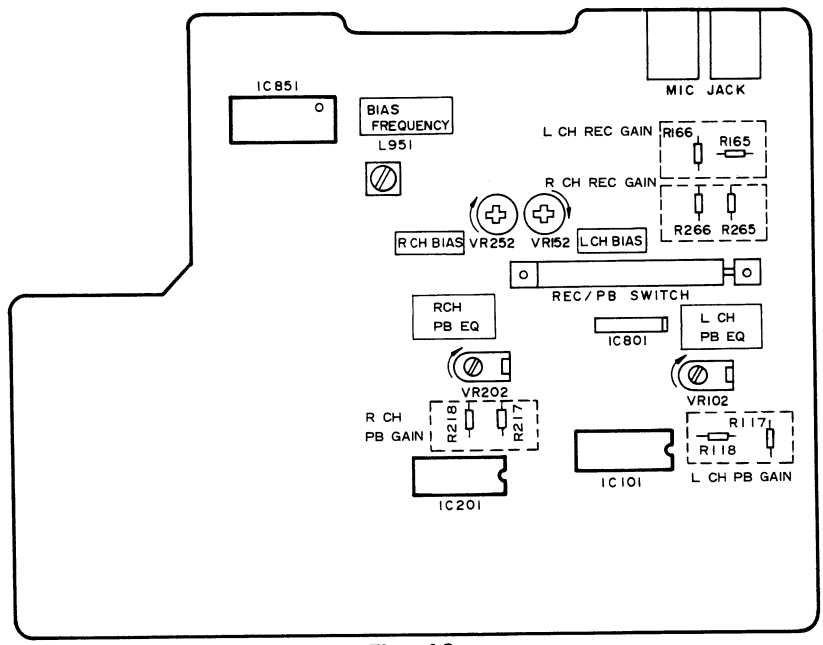


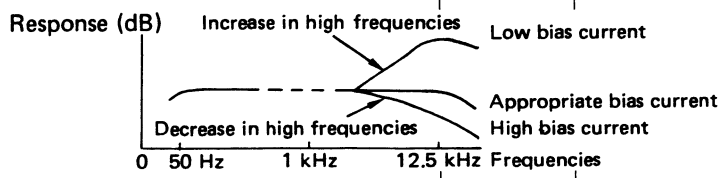
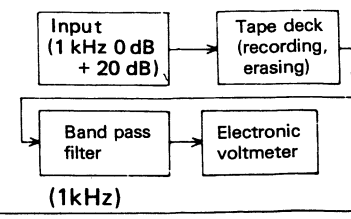
Fig. 10

[IV] Electrical circuit adjustment procedure

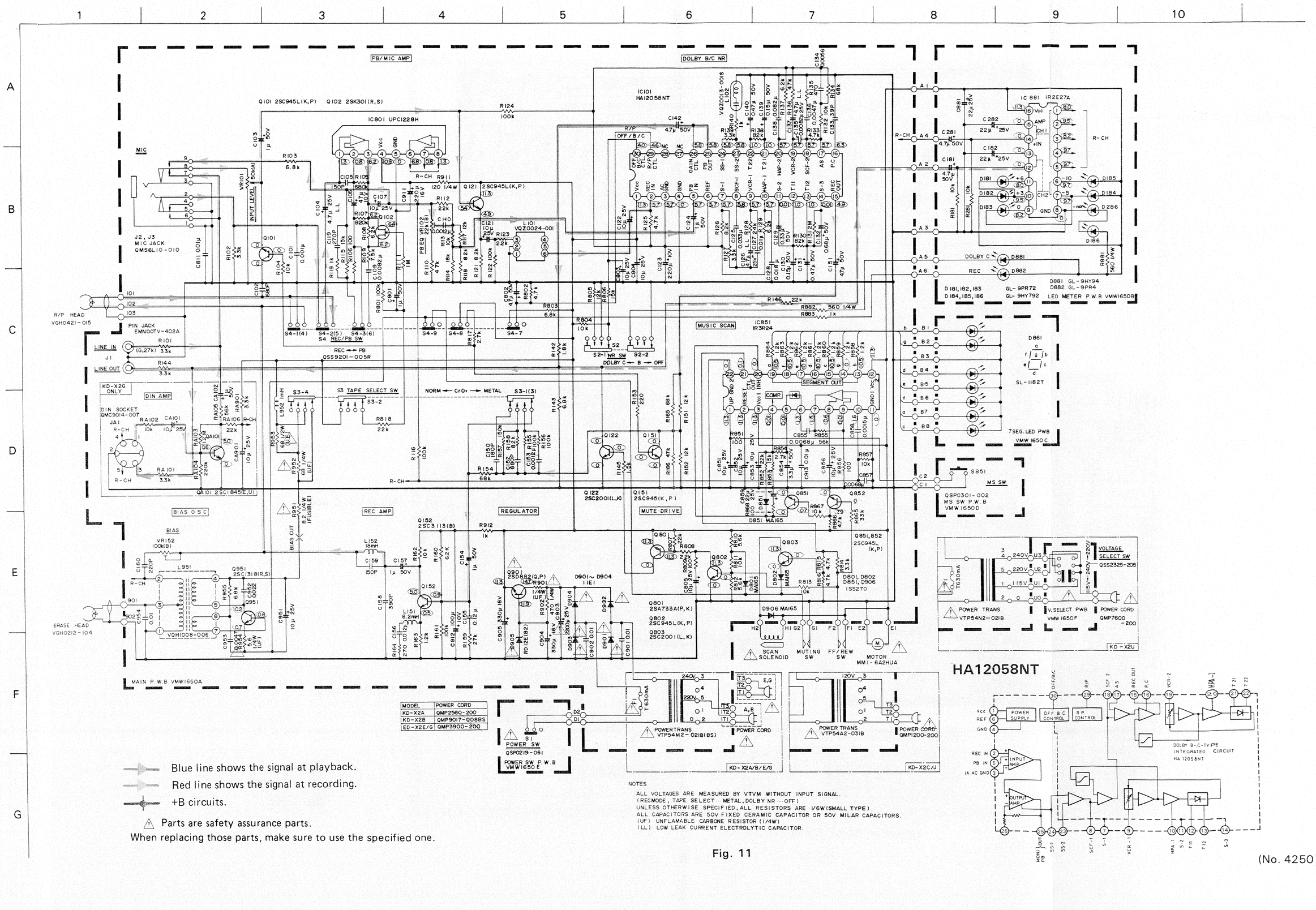
In the steps marked by an asterisk (*), adjustment should be performed, however, only checking is sufficient with steps other than those.

Adjustment should be performed in the order of steps 1, 2, 3, ... Perform this adjustment with the NR SYSTEM switch set to OFF.

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
1*	Checking playback gain	1) Play back test tape VTT644 (or VTT-724), then adjust and check that the level at LINE OUT is −8 dBs ± 2 dB. 2) If the standard value cannot be obtained, adjust the playback gain using R117 & R118 in combination (for L-ch) and R217 & R218 (for R-ch), respectively.	L-ch: R117 0.8dB down R118 0.8dB up R-ch: R217 R218	−8dBs ±2dB	When the head is replaced, adjust playback gain level. Connect an electronic voltmeter (with an impedance of 10 kΩ or more) to LINE OUT terminals. **Note:** Before adjustment, confirm that each set of resistors (R117 & R118 or R217 & R218) has been connected or disconnected.
2*	Playback frequency response	Play back test tape VTT739, then adjust VR102 and VR202 so that the level of 1 kHz and 10 kHz signals is 0 ± 2 dB.	VR102 (L-ch) VR202 (R-ch)	Reference frequency: 1 kHz, 0 ± 2 dB at 10 kHz	NR SYSTEM : OFF TAPE SELECT : NORM

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
3	Adjusting bias frequency	Connect the frequency counter to the pin 2 of L951 through a 1.2 MΩ resistor, then adjust L951 so that the counter reads 95 kHz.	L951	95 kHz ±1 kHz	
*4	Recording frequency response	1) NR switch: OFF 2) Record a 1 kHz signal at an input reference level of −20 dB, then record 50 Hz and 12.5 kHz signals and play them back. At this time, adjust VR 152 and VR 252 so that the deviation of 50 Hz and 12.5 kHz outputs satisfy the standard values with respect to 1 kHz output. 	For Normal tape: VR 152 (LCH) VR 252 (RCH)	With respect to 1 kHz reference: At 50 Hz, 0 ± 3 dB; At 12.5 kHz, 0 ± 3 dB	This checking should be performed for normal tapes and for both right and left channels. 1. Bias current adjustment for a cassette deck should generally be performed referring to the record/playback frequency response. This is because the frequency response of a cassette deck depends more greatly on the bias current than does that of an open reel deck. 2. If the bias current is not properly adjusted, the record and playback characteristics become as shown left.
5	Checking recording level	1. Apply a 1 kHz −23 ±3 dBV Signal to the LINE. in terminals, play back the recorded part, and check so that Line out terminal level become 0 ± 2.0 dB. 2. If the standard value cannot be obtained, adjust the recording level using R165 and R166 in combination (for L-ch), and R265 and R266 (R-ch), respectively.		0±2.0dB	The level difference between left and right channels for SF/NORM tape and chrome tape should be less than 3 dB. Perform the adjustment using a normal tape, level difference between recording and playback for SA/CrO_2 and metal tapes, should be less than 3 dB, and that between left and right channels should also be less than 3 dB.
6	Checking record/playback distortion	1. Record a 1 kHz, −8 dB signal to LINE IN terminals and perform recording with the multi-peak becomes to 0. 2. Play back the recorded part. Check the output with a distortion meter to see if the value conforms to the standard value.		NORM tape; Less than 2.0% CrO_2 tape; Less than 3% Metal tape; Less than 2% (THD)	Be sure to perform this checking following bias current and recording level checking.
7	Checking signal to noise ratio in recording/playback	1. Record a 1 kHz, 0 dB signal. Stop the input by disconnecting from the terminal to perform non-signal recording. 2. Play back the recorded part. Measure the 0 dB recording output and the non-signal recording output for comparison using an electronic voltmeter. Check to see if the value conforms to the standard value.		NORM, CrO_2 and Metal tapes; More than 42 dB	Apply an output (−72 dBs) to the MIC terminals with the recording level controls set to maximum so that the multi-peak indicator becomes 0 dB.
8	Checking erasing coefficient	1. Apply a 1 kHz signal to the LINE IN terminals. Adjust the recording level controls until the multi-peak indicator becomes 0 dB. 2. Perform recording with the signal enhanced by 20 dB. 3. Erase a part of the recording. 4. Measure the output difference between the erased part and non-erased part to compare with an electronic voltmeter.		More than 65 dB	For the measuring, connect a band pass filter between the deck and the electronic voltmeter. 

Standard Schematic Diagram



NOTES

ALL VOLTAGES ARE MEASURED BY VTVM WITHOUT INPUT SIGNAL.
(RECMODE, TAPE SELECT ··· METAL, DOLBY NR ··· OFF)
UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE 1/6W (SMALL TYPE)
ALL CAPACITORS ARE 50V FIXED CERAMIC CAPACITOR OR 50V MILAR CAPACITORS.
(UF) UNFLAMABLE CARBONE RESISTOR (1/4W)
(LL) LOW LEAK CURRENT ELECTROLYTIC CAPACITOR.

Fig. 11

P.C.Board Parts and Parts List

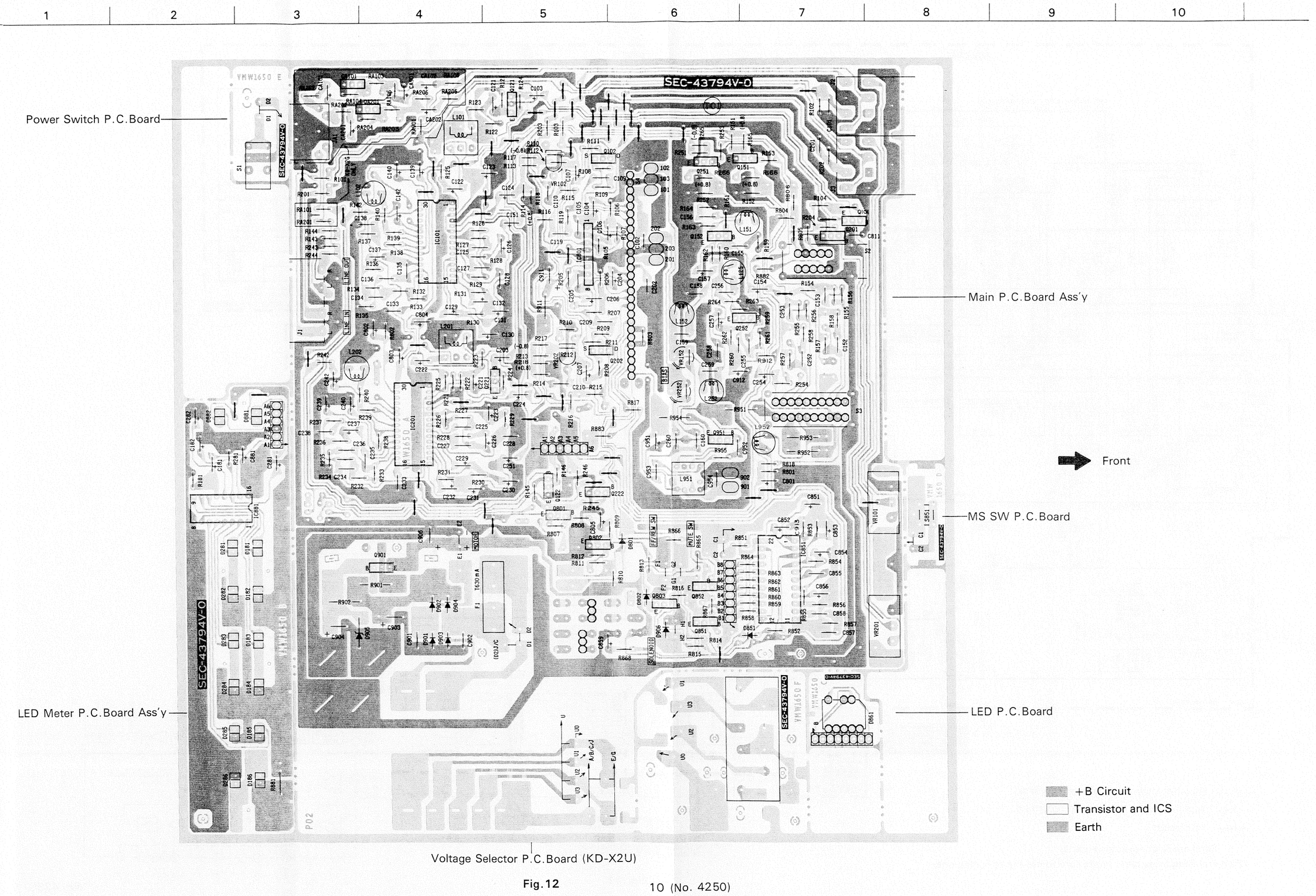


Fig.12

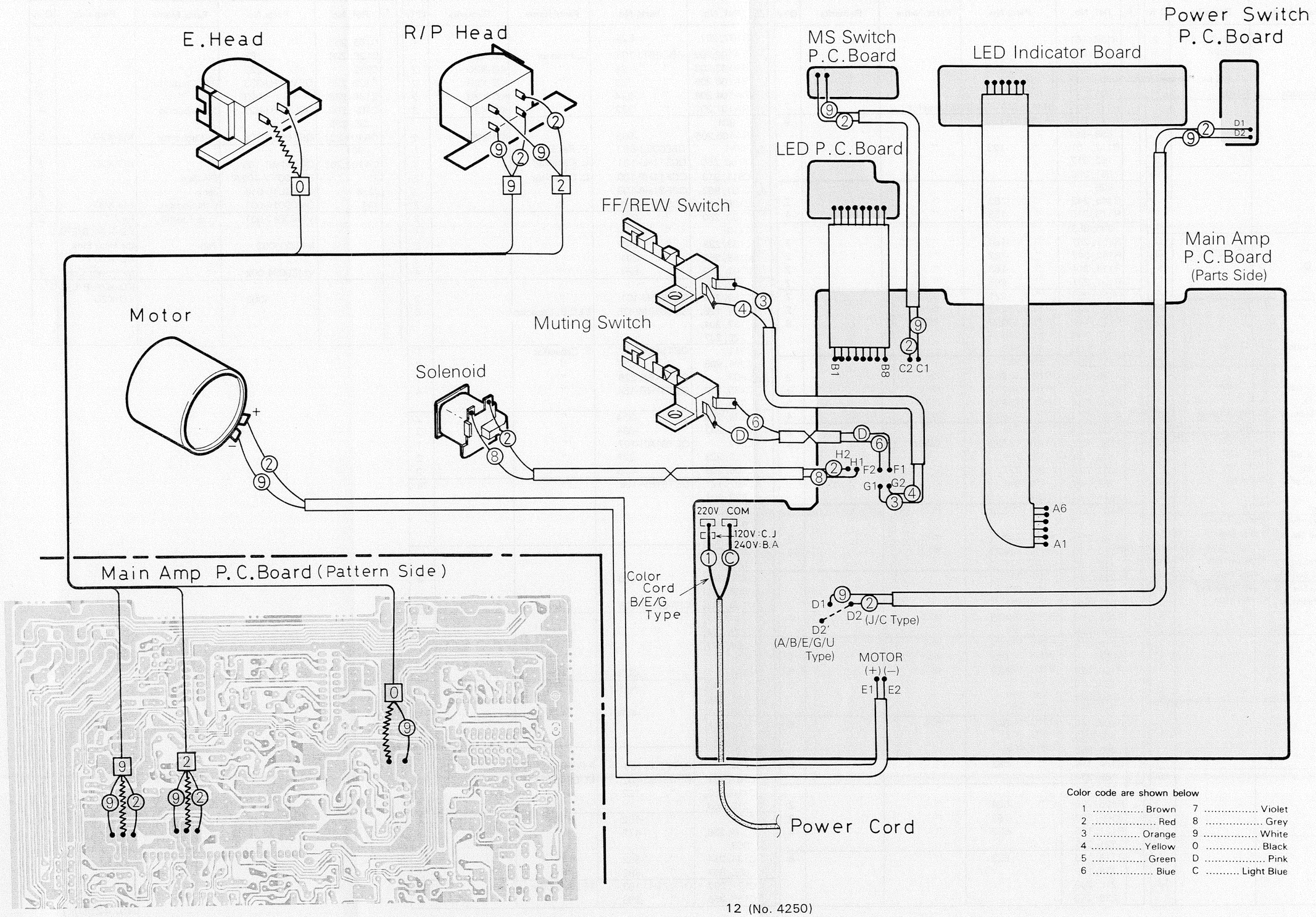
P.C.B. Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	IC101, 201	HA12058NT	I.C.	Dolby B/C NR	2
	IC881	IR2E27A	"	Indicator	1
	IC851	IR3R24	"	MMS	1
	IC801	UPC1228H	"	Head & Mic. Amp.	1
	Q801	2SA733A(P,K)	Transistor		1
	Q951	2SC1318(R,S)	"		1
	Q122, 222, 803	2SC2001(L,K)	"		3
	Q152, 252	2SC3113(B)	"		2
	Q101, 121, 151, 201, 221, 251, 802, 851, 852	2SC945L(P,K)	"		9
⚠	Q901	2SD882(P,Q)	"		1
	Q102, 202	2SK301(R,S)	"		2
	QA101,201	2SC1845(E,U)	"	KD-X2G	2
	D184–186, 284–286	GL-9HY792	L.E.D.		6
	D881	GL-9HY94	"	Dolby C	1
	D882	GL-9PR4	"	REC	1
	D181–183, 281–283	GL-9PR72	"		6
⚠	D901–904	11E1	Si. Diode		4
	D801, 802, 851, 906	1SS270TJ	"		4
⚠	D905	RD12E	Ze. Diode		1
	D861	SL-1182T	L.E.D.		1
	VR101,201	QVF0A2A-054	V. Resistor	Input Level	2
	VR152,252	QVP4A0B-104	"	Bias	2
	VR102,202	QVZ1802-223	"	PB, EQ	2
	L951	VQH1008-006	Osc. Coil		1
	L952	VQP0001-102S	Inductor		1
	L152, 252	VQP0001-183	Inductor		2
	L151, 251	VQP0001-822	"		2
	L102, 202	VQZ0013-001S	Filter		2
	L101, 201	VQZ0024-001	Dolby Filter		2
	S2	QSL2310-101V	Lever Switch	NR SW	1
	S3	QSL4310-013	"	Tape Select SW	1
⚠	S1	QSP0219-061	Push Switch	Power SW	1
	S851	QSP0301-002	Tact Switch	MS SW	1
	S4	QSS9201-005R	Slide Switch	REC/PB SW	1
⚠	R953	QRD129J-680	C. Resistor		1
	R911	QRD144J-121S	"		1
	R881, 882	" -561S	"		2
⚠	R901	QRD149J-1R0S	"		1
	R902	QRD149J-471S	"		1
⚠	R954	" -5R6S	"		1
⚠	R952	" -680S	"		1
	R106, 206, 809, 851, 856, 868, R119, 140, 240, 883, 912	QRD161J-101	"		6
	R104, 113, R132, 162, 181, 204, 213, 232 262, 281,	" -102	"		5
	804, 811, 813, 857, 867 R116, 122, 124, 155,	" -103	"		15
	R156, 161 216, 222 224, 255 256, 261, 801 R111, 211	" -104	"		13
	R163, 263, 858–864 R117, 151, 152, 217, 251, 252, 805	QRD161J-105	C. Resistor		2
	R145, 245	" -122	"		9
	R115, 215	" -123	"		7
	806, 853 R157, 257	" -152	"		2
	R142, 242	" -153	"		4
	R114, 214	" -154	"		2
	R131, 231	" -182	"		2
	R153, 253	" -183	"		2
	R123, 223	" -205	"		2
	R112, 146, 212, 246, 807, 808, 818, 852	" -221	"		2
	R128, 228	" -222	"		2
	R164, 264	" -223	"		8
	R817, 854	" -243	"		2
	R101, 201	" -271	"		2
	159, 259 R102, 127, 139, 144, 202, 227, 239, 244, 814	" -272	"		2
	R101, 201, 865	" -273	"	KD-X2G	4
	R135, 235	" -332	"		2
	R110, 125, 133, 210, 225, 233, 802, 815, 816, 866 R136, 166, 236, 266	" -333	"	KD-X2A/B/C/E/J/U	9
	R810, 812	" -471	"		2
	R855	" -472	"		10
	R108, 129, 137, 160, 208, 229, 237 260	" -473	"		4
	R103, 143, 203, 243, 803, 955 R134, 154, 165, 234, 254, 265	" -562	"		2
	R105, 205	" -563	"		1
	R109, 209	" -622	"		6
	R121, 126, 221, 226	" -682	"		8
	R118, 130, 138, 158, 218, 230, 238, 258	" -683	"		6
		" -684	"		2
		" -752	"		2
		" -822	"		4
		" -823	"		8

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	R107, 207	" -824	"		2
	RA102,202	QRD161J-103	C. Resistor	KD-X2G	2
	RA103,203	" -125	"	KD-X2G	2
	RA106,206	" -223	"	KD-X2G	2
	RA104,204	" -224	"	KD-X2G	2
	RA101,201, 901	" -332	"	KD-X2G	3
	RA105,205	" -563	"	KD-X2G	2
⚠	R951	QRZ0052-8R2	F. Resistor		1
	C150,250	QCS11HJ-181	C. Capacitor		2
	C811, 913	QCF11HP-103	C. Capacitor		2
⚠	C901, 902	QCF31HP-103	"		2
	C105, 205	QCS31HJ-151	"		2
	C160, 260	" -221	"		2
	C119	" -271	"		1
	C133, 233	" -390	"		2
	C158, 258	" -391	"		2
	C102, 152, 202, 252	" -681	"		4
	C159, 259	QCS32HJ-151	"		2
	C104, 126, 137, 204, 226, 237	QEB61EM-475	LLC E. Capacitor		6
	C911	QET51CR-227	E. Capacitor		1
	C904, 905	" -337	"		2
⚠	C903	QET51ER-228	"		1
	C130, 139, 230, 239	QET51HR-154	"		4
	C129, 229	" -334	"		2
	C132, 232	" -684	"		2
	C912	QET61AR-107	"		1
	C123, 223	" -227	"		2
	C106, 206	" -476	"		2
	C107, 121, 122, 207, 221, 222, 803, 804, 805, 851,	QET61ER-106	"		14
	852, 853, 856, 951 C182, 282, 859, 881	" -226	"		4
	C103, 124,	QET61HR-105	"		9
	154, 157, 203, 224, 254, 257, 801 C854	" -335	"		1
	C131, 140, 231, 240 C142, 151, 181, 242, 251, 281,	" -474	"		4
	802 C954	" -475	"		7
	C101, 201	QFP82AJ-103	P.P. Capacitor		1
	C110, 153, 210, 253	QFN31HJ-102	M. Capacitor		2
	C858	" -122	"		4
	C136, 236, 953	" -152	"		1
	C134, 234	" -472	"		3
	C855, 857	" -562	"		2
	C127, 227	" -682	"		2
	C156, 256	QFV71HJ-103	TF. Capacitor		2
	C155, 255	" -256	"		2
	C128, 228	" -124	"		2
	C952	" -183	"		2
	C125, 225	" -223	"		1
	C138, 238	QFV71HJ-333	TF. Capacitor		2
	C109, 209, 135, 235	" -823	"		2
	CA101,201, 901	QFN31HJ-822	M. Capacitor		4
	CA102,202	QET61ER-106	E. Capacitor	KD-X2G	3
	J1	QET61HR-105	"	KD-X2G	2
	J2, 3	EMN00TV-402A	Pin Jack		1
	JA1	QMS6L10-010	Jack		2
		QMC9014-007	DIN Socket	KD-X2G	1
		VMZ0043-001	Fuse Clamp	for F1 KD-X2A/B/E/G/U	2
		E43727-002	Tab	for Heat Sink KD-X2U	1
		VMZ0034-002	"	for Power Cord	2
		" -002	"	KD-X2A/B/C/E/G/J KD-X2U	1

Wiring Connections



Color code are shown below

1	Brown	7	Violet
2	Red	8	Grey
3	Orange	9	White
4	Yellow	0	Black
5	Green	D	Pink
6	Blue	C	Light Blue

Enclosure Assembly Parts List

Black type Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	1	VKL3612-001	Amp. Chassis		1
	2	VKH4673-001	Shaft	for REC Arm	1
	3	VKW4540-001	Spring	for "	1
	4	REE3000X	Washer	for Shaft	1
	5	VKL5832-001	Recording Arm		1
	6	SDST3008Z	Screw		1
	8	VKZ4001-011	Wire Holder		2
	9	SDST3006Z	Screw		1
⚠	10	VJC2171-001	Rear Panel	KD-X2A/B/C/E/J	1
⚠		" -002	"	KD-X2U	1
⚠		" -003	"	KD-X2G	1
	11	SDST3006N	Tapping Screw	KD-X2A/B/C/G/J, for Rear Panel	2
		SDSP3006N	Screw	KD-X2U, for Rear Panel	2
	12	SDSP3006N	"	KD-X2U, Voltage Selector	2
	13	E48729-002	Rivet	KD-X2G, DIN Jack	2
⚠	14	QMP1200-200	Power Cord	KD-X2C/J	1
⚠		QMP2560-200	"	KD-X2A	1
⚠		QMP3900-200	"	KD-X2E/G	1
⚠		QMP7600-200	"	KD-X2U	1
⚠		QMP9017-008BS	"	KD-X2B	1
⚠	15	QHS3876-162	S.R. Bushing	KD-X2A/C/E/G/J/U	1
⚠		" -162BS	"	KD-X2B	1
⚠	16	VTP54A2-031B	Power Transformer	KD-X2C/J	1
⚠		VTP54M2-021B	"	KD-X2A/E/G	1
⚠		" -021BBS	"	KD-X2B	1
⚠		VTP54N2-021B	"	KD-X2U	1
	17	SDST3006Z	Tapping Screw	for Power Transformer	2
	18	SBSF3010Z	"		1
⚠	19	QMF51A2-R63	Fuse	KD-X2A/E/G/U	1
⚠		" -R63BS	"	KD-X2B	1
	20	SDST3006Z	Tapping Screw	for P.C. Board	1
	21	WBS3000N	Washer		1
	22	SDSF3008N	Tapping Screw	for Pin Jack	1
	23	SSSF3012Z	"		3
	24	VJC1418-004	Front Plate		1
	25	SSSF3008Z	Tapping Screw	for Front Plate	3
⚠	26	VJC1417-007	Front Panel	KD-X2A/B/C/E/G/U	1
⚠		" -008UL	"	KD-X2J	1
	27	VKZ4150-001	Special Nut		1
	28	VJK3302-001	Lens		1
	29	VXP3131-001	Power Knob		1
	30	VXQ4074-002	Lever Knob		2
	31	VXL4255-001	Volume Knob		2
	32	VKL3620-001	Bracket		1
	33	E70913-001	Mark		1
	34	VJD4919-002	Sheet		1
	35	VYH5033-002	Damper Holder		1
	36	VYH4769-002	Gear		1
	37	SDSF3012Z	Tapping Screw	for Damper Holder	1
	38	VKC5168-001T	Counter Ass'y		1
	39	SDSF2605Z	Tapping Screw		1
	40	VKB3000-072	Counter Belt		1
	41	VKL5383-002	Bracket		1
	42	SSSF3008Z	Tapping Screw	for C. Bracket	2
	43	VJT2106-001	Cassette Holder		1
	44	VJT3140-004	Cassette Case		1
	45	VJD4895-001	Plate		1
	46	VKY4271-005	C. Spring		1
	47	" -006	"		1
	48	VKW4397-003	Spring		1

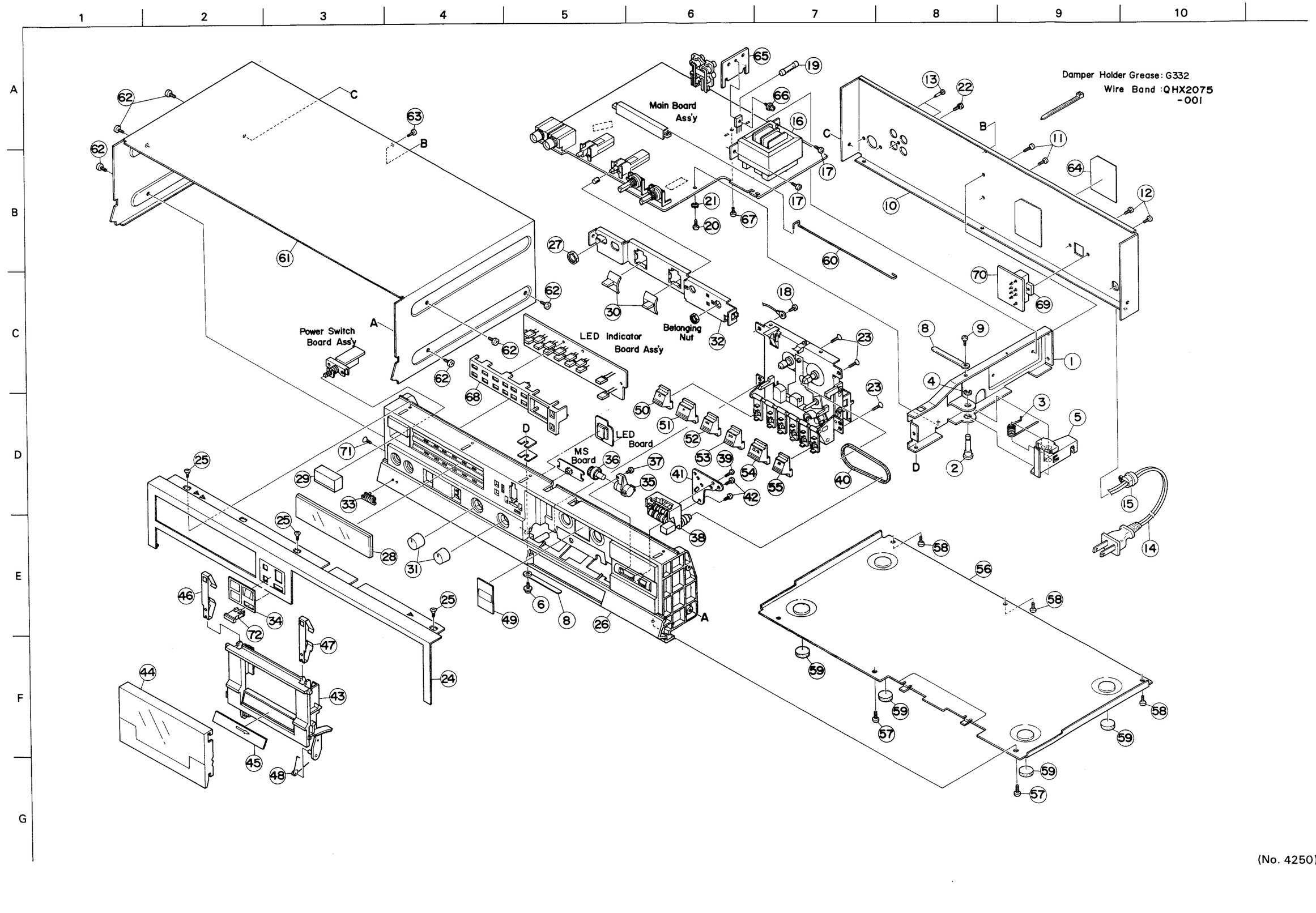
NOTE: ZCKDX2□-FSL
Entry of the assembly parts number
↑ Enter the code name which is on the name plate and order the part.

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	49	VJD4896-001	Plate		1
	50	VXP3129-007	Push Button	REC	1
	51	" -008	"	PLAY	1
	52	" -009	"	REW	1
	53	" -010	"	FF	1
	54	" -011	"	STOP/EJECT	1
	55	" -012	"	PAUSE	1
	56	VJC2174-001	Bottom Cover		1
	57	SDSF3008Z	Tapping Screw	for Bottom (Front)	2
	58	SDST3006Z	"	for " (Rear)	3
	59	VJF4003-002	Foot		4
	60	VKW4545-002	REC Wire		1
	61	VJC2175-002	Top Cover		1
	62	SDSB4010M	Tapping Screw	for Top Cover	6
	63	SDST3006M	"	for "	1
⚠	64	VYN2140-002PA	Name Plate	KD-X2B	1
⚠		" -003PA	"	KD-X2A	1
⚠		" -004PV	"	KD-X2C	1
⚠		" -005PA	"	KD-X2E	1
⚠		" -006PA	"	KD-X2J	1
⚠		" -007PA	"	KD-X2U	1
⚠		" -008PA	"	KD-X2G	1
	65	VKL5002-001	Heat Sink		1
		VMH4003-001	"	KD-X2U Version	1
	66	DPSP3008Z	Screw	for Q901	1
	67	SSSP3006Z	"	KD-X2U Version	1
	68	VKS3252-001	LED Holder		1
⚠	69	QSS2325-204	Slide Switch	KD-X2U Version	1
⚠	70	VMW4680-001	Voltage Selector Board	KD-X2U Version	1
	71	SSST3006Z	Tapping Screw		1
	72	VXP4306-010	Push Knob	MULTI MUSIC SCAN	1
	24,26,28, 33,34,49	ZCKDX2□-FSL	Front Panel Ass'y	Silver	1
		ZCKDX2□-FBK	Front Panel Ass'y	Black	1
	43,45,46, 47	ZCKDX2□-CH	Cassette Holder Ass'y		1

Comparison Table Between Black Type and Silver Type

Ref. No.	Black Type Parts No.	Q'ty	Silver Type Parts No.	Q'ty	Parts Name
24	VJC1418-004		VJC1418-003	1	Front Plate
26	VJC1417-007		VJC1417-003	1	Front Panel (KD-X2A/B/C/E/G/U)
"	" -008UL		" -004UL	1	Front Panel (KD-X2J)
33	E70913-001		E70913-002	1	JVC Mark
34	VJD4919-002		VJD4919-001	1	Sheet
50	VXP3129-007		VXP3129-001	1	Push Button (REC)
51	" -008		" -002	1	" (PLAY)
52	" -009		" -003	1	" (REW)
53	" -010		" -004	1	" (FF)
54	" -011		" -005	1	" (STOP/EJECT)
55	" -012		" -006	1	" (PAUSE)
61	VJC2175-002		VJC2175-001	1	Top Cover
62	SDSB4010M		SDSB4010R	6	Tapping Screw
63	SDST3006M		SDST3006R	1	Screw

Exploded View of Enclosure Assembly



Exploded View of Mechanisn Assembly

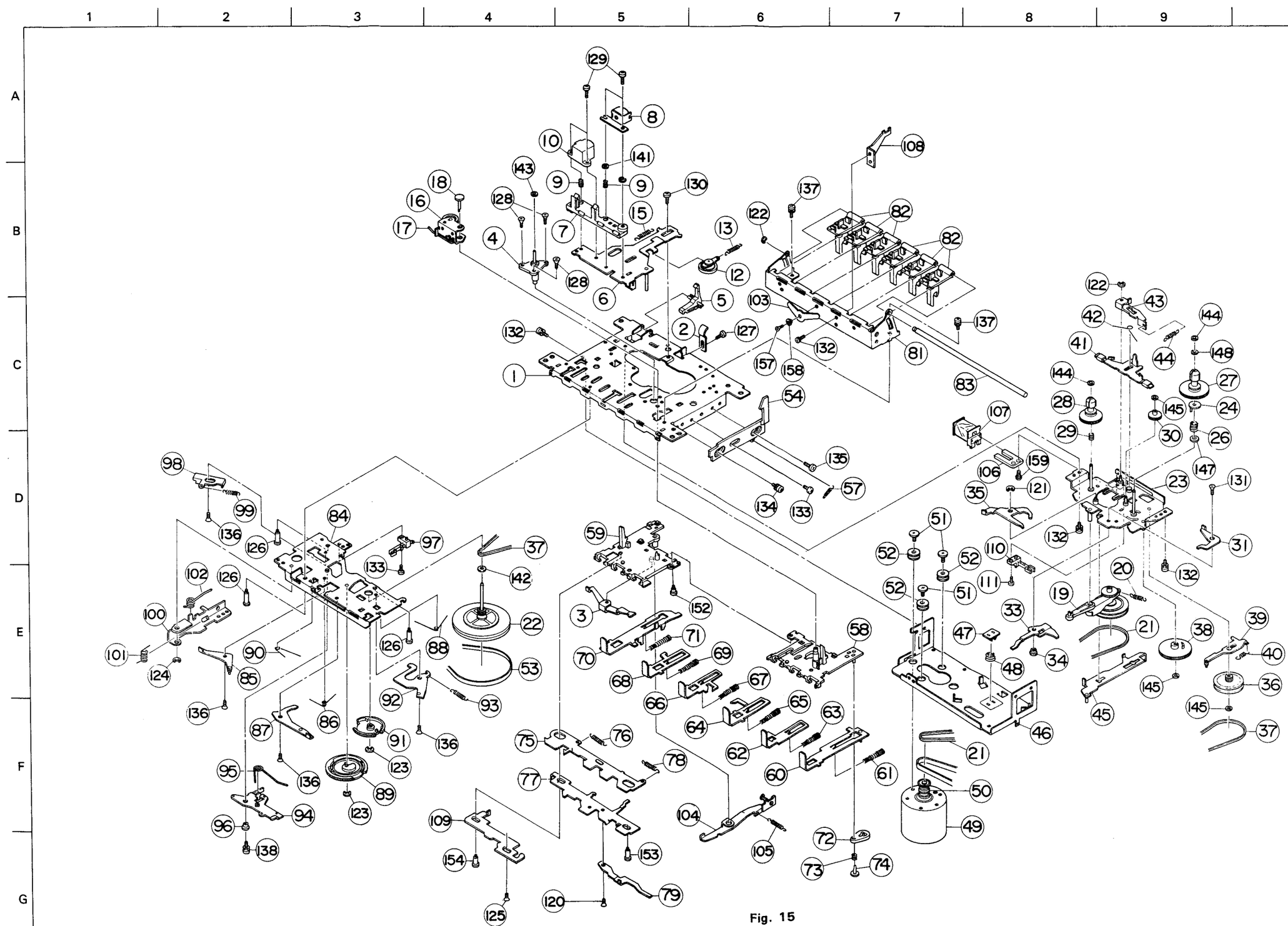


Fig. 15

Mechanism Assembly Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	1	18200101T	CHASSIS BASE		1
	2	18200102T	PACK SPRING		1
	3	18200201T	STOPPER	REC	1
	4	18201207T	FLYWHEEL METAL		1
	5	18000201T	REC.S. LEVER	REC. SAFETY	1
	6	182003501ZT	HEAD PANEL		1
	7	18200311T	HEAD BASE		1
	8	VGH0421-015	R/P HEAD		1
	9	14400315T	HEAD SPRING	R/P HEAD	1
		14400315T	HEAD SPRING	ERASER HEAD	1
	10	VGH0212-104	ERASER HEAD		1
	12	182003301ZT	T-UP ROLLER	PLATE ASS'Y	1
	13	18200312T	SPRING	T-UP ROLLER PLATE	1
	15	18200302T	SPRING	HEAD PANEL	1
	16	182004303ZT	PINCH ROLLER		1
	17	18200403T	P.ROLLER SPRING		1
	18	17152015T	STOPPER		1
	19	182007301ZT	RF.CLUTCH ASS'Y		1
	20	18200704T	SPRING	RF.CLUTCH ARM	1
	21	17150606T	RF. BELT		1
	22	182012301ZT	FLYWHEEL ASS'Y		1
	23	182005505ZT	BRACKET ASS'Y	REEL BRACKET	1
	24	18200814T	A.DETECT PIECE		1
	26	18200817T	A.PIECE SPRING		1
	27	182006301ZT	REEL ASS'Y	TAKE UP	1
	28	182006302ZT	REEL ASS'Y	SUPPLY REEL	1
	29	18200608T	SPRING	BACK TENSION	1
	30	18000610T	GEAR	FF	1
	31	18200910T	T.R KICK LEVER		1
	33	18200805T	AUTO STOP LEVER		1
	34	18200811T	COLLAR	AUTO STOP LEVER	1
	35	18200911T	KICK LEVER		1
	36	18200801T	PULLEY		1
	37	18200809T	BELT	AUTO STOP	1
	38	18200802T	CAM GEAR		1
	39	18200803AT	DETECT LEVER		1
	40	18200810T	DETECT LEVER SPRING		1
	41	182009301ZT	BRAKE ARM ASS'Y		1
	42	18200902T	BRAKE SPRING		1
	43	18200905T	A.S.G.LEVER		1
	44	18200914T	SPRING		1
	45	182009501ZT	SLIDE LEVER		1
	46	18201301T	FM BRACKET		1
	47	18201302T	FL.THRUST PLATE		1
	48	18201310T	THRAST SPRING		1
⚠	49	MMI-6A2HUA	CAPSTAN MOTOR		1
	50	18201304T	MOTOR PULLEY		1
	51	18201305T	COLLAR SCREW	MOTOR	3
	52	18201306T	RUBBER CUSHION	MOTOR	3
	53	18201303T	CAPSTAN BELT		1
	54	18201401T	EJECT LEVER		1
	57	15590306T	SPRING	EJECT SLIDE LEVER	1
	58	18201001AT	BUTTON BASE (L)		1
	59	18201002AT	BASE		1
	60	182010501ZT	LEVER ASS'Y	PAUSE BUTTON	1
	61	18000903T	B.LEVER SPRING		1
	62	18201022T	LEVER	STOP BUTTON	1
	63	18201027T	BUTTON LEVER SPRINGO		1
	64	18201021T	LEVER	FF BUTTON	1
	65	18000903T	B.LEVER SPRING		1

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	66	18201020T	LEVER	REW. BUTTON	1
	67	18201026T	LEVER SPRING		1
	68	18201019T	LEVER	PLAY BUTTON	1
	69	18201026T	LEVER SPRING		1
	70	18201018T	LEVER	REC. BUTTON	1
	71	18201026T	LEVER SPRING		1
	72	18201041T	PAUSE LEVER		1
	73	18201034T	LEVER SPRING		1
	74	18201032T	STOPPER		1
	75	18201009T	CAM		1
	76	18201052T	STOPER SPRING	BUTTON CAM	1
	77	18201010T	SWITCH CAM		1
	78	18201031T	SPRING	SWITCH CAM	1
	79	18201011T	KICK LEVER		1
	81	18201015T	BUTTON FRAME		1
	82	18201028T	FUNCTION LEVER		6
	83	18201016T	LEVER SHAFT		1
	84	182011501ZT	CHASSIS BASE		1
	85	182011510ZT	ARM ASS'Y	M.TRIGGER	1
	86	18201126T	SPRING	M.TRIGGER ARM	1
	87	182011503ZT	ARM ASS'Y	P. TRIGGER	1
	88	18201127T	SPRING	P.TRIGGER ARM	1
	89	18201103T	MAIN GEAR		1
	90	18201131T	SPRING	MAIN GEAR	1
	91	18201104T	PAUSE GEAR		1
	92	182011504ZT	PAUSE ARM ASS'Y		1
	93	17000932T	SPRING	PAUSE ARM ASS'Y	1
	94	182011505ZT	LIFT ARM ASS'Y		1
	95	18201129T	SPRING	LIFT ARM	1
	96	18201130T	COLLAR	LIFT ARM	1
	97	64010170T	LEAF SWITCH	MSW-1412TNBK	1
	98	18201121T	PLATE	REC. FUNCTION	1
	99	17001612T	SPRING	REC. FUNCTION PLATE	1
	100	18201122T	RECORDING ARM		1
	101	18201124T	SPRING	REC. ARM	1
	102	18201136T	SPRING	REC. DANPER	1
	103	18201036T	RF STOPPER		1
	104	182015307ZT	LEVER		1
	105	18201505T	SPRING		1
	106	17001513T	YOKE (B)		1
⚠	107	182015301T	COIL		1
	108	18201035T	B.SHAFT STOPPER		1
	109	18201013BT	M.S.FUNC.PLATE		1
	110	MSW-1275	LEAF SWITCH	FF, REW	1
	111	SPSP2004Z	SCREW	FF, REW	1
	120	18200819T	SCREW	EJECT KICK LEVER	1
	121	REE1200	E.RING	KICKLEVER	1
	122	REE1500	E.RING	LEVER SHAFT	1
		REE1500	E.RING		1
	123	REE2000	E.RING		1
	123	REE2000	E.RING		1
	124	REE3000	E.RING		1
	125	18201051T	COLLAR SCREW	M.S.FUNCTION PLATE	1
	126	18201137T	SCREW		3
	127	SPST2603Z	TH.TAP.SCREW		1
	128	SSSK2030M	MINI SCREW	FL METAL	3
	129	SPSX2007Z	PM. SCREW	R/P HEAD	2
		SPSX2007Z	PM. SCREW	ERASER HEAD	2
	130	18200316T	P.COLLAR SCREW		1
	131	18200818T	COLLAR SCREW	T.R KIK LEVER	1

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	132	LPSP2004Z	ASSY SCREW	REEL BRACKET	2
		LPSP2004Z	ASSY SCREW		1
		LPSP2004Z	ASSY SCREW		1
	133	SPSP2004Z	SCREW	FM BRACKET	1
		SPSP2004Z	SCREW		1
	134	18201418T	COLLAR SCREW	EJECT SLIDE LEVER	1
	135	18201419T	COLLAR SCREW	EJECT SLIDE LEVER	1
	136	18200819T	SCREW	REC. FUNCTION	1
		18200819T	SCREW	P.TRIGGER ARM	1
		18200819T	SCREW	M.TRIGGER ARM	1
		18200819T	SCREW	PAUSE ARM ASS'Y	1
	137	LPSP2604Z	SCREW		2
	138	LPSP2606Z	SCREW		1
	141	93160000T	WASHER		1
	142	97880000T	WASHER	THRUST	1
	143	93720000T	NYLON WASHER	OIL CUT	1
	144	94970000T	E-RING		1
		94970000T	E-RING	T-UP REEL	1
	145	94210000T	WASHER	FF GEAR	1
		94210000T	WASHER	CAM GEAR	1
		94210000T	WASHER	PULLEY	1
	147	18200807T	FELT		1
	148	97910000T	POLY WASHER		1
	152	18201025T	SCREW		1
	153	18201029T	SCREW		1
	154	18201030T	SCREW		1
	157	SSSK2030M	MINI SCREW		1
	158	18201014T	COLLER		1
	159	LPSP2005Z	SCREW		1

Accessories

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
⚠		VNN0158-301	Instruction Book	KD-X2B/E/G	1
⚠		" -901	"	KD-X2A/C/J/U	1
		VMP0039-00B	Pin Cord		1
		BT20047B	Warranty Card	KD-X2J/U	1
		BT20066	"	KD-X2B/G	1
		BT20060	"	KD-X2B	1
		BT20029C	"	KD-X2A	1
		BT20025H	"	KD-X2C	1
		BT20064	"	KD-X2G	1
		BT20046B	Special Reply Card	KD-X2J/U	1
⚠		BT20044D	Safety Instruction	KD-X2J	1
		TJL000443-01	Label	KD-X2B	1
⚠		QZL1002-003	Warning Label	"	1
⚠		VND4033-010	Sticker	KD-X2A/C/E/G/U	1
⚠		VND4113-001	G. Caution	KD-X2B/J	1
		VNF0158-001	Feature Sticker	KD-X2A/B/E/G/U	1
⚠		T44362-001	CSA Label	KD-X2C	1
		BT20071A	SVC Center List	"	1
		VNC1200-002	Copyright Law Warning	KD-X2C	1
		VNC5004-001	Mark Sticker	(DIN 45500) KD-X2B/E/G	1
		VNC5311-203	Caution Card	for EES KD-X2U	1
		" -204	"	for PX KD-X2U	1
⚠		V04062-001	Siemens Plug	KD-X2U	1
		VND4037-002	F. Mark	KD-X2G	1
		VNC2208-001	Instruction Sheet	KD-X2G	1
⚠		VNN0158-801	Instruction Book	KD-X2E	1
		VNF0158-001	Feature Sticker	KD-X2C(Black Type only)	1

Packing

Positions of Controls and Switch Knobs at Renewed Packing

POWER Switch	: OFF
NR SYSTEM Switch	: OFF
TAPE SYSTEM Switch	: OFF
INPUT LEVEL Volume Control	: MIN
TAPE COUTER	: 000
Mechanism Operation Button	: OFF

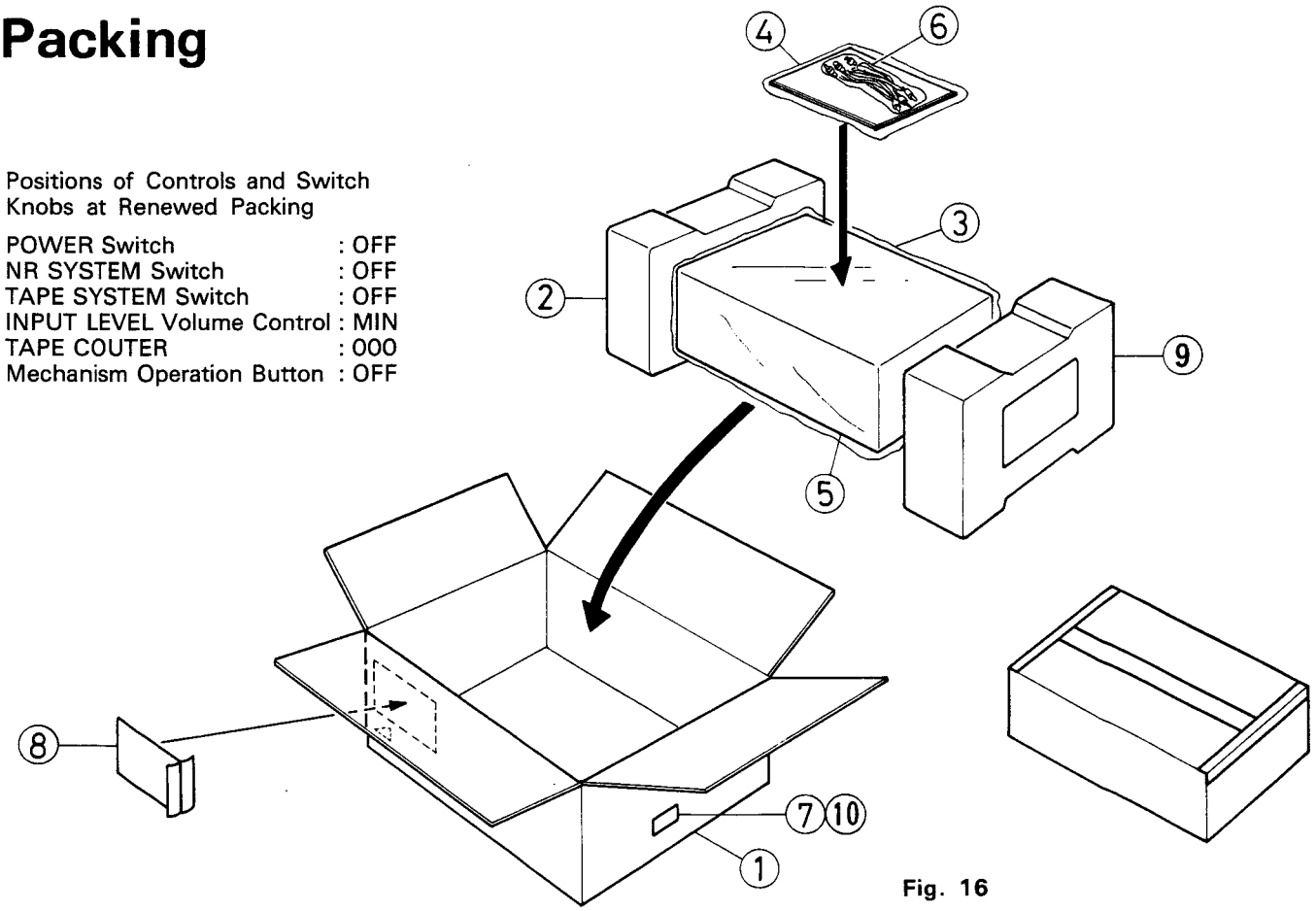


Fig. 16

	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	1	VPC2155-002	Carton	KD-X2B (Silver Type)	1
	"	" -003	"	KD-X2A (")	1
	"	" -004	"	KD-X2C (")	1
	"	" -005	"	KD-X2E (")	1
	"	" -006	"	KD-X2J (")	1
	"	" -007	"	KD-X2U (")	1
	"	" -008	"	KD-X2G (")	1
	"	VPC2156-002	"	KD-X2B (Black Type)	1
	"	" -003	"	KD-X2A (")	1
	"	" -004	"	KD-X2C (")	1
	"	" -005	"	KD-X2E (")	1
	"	" -006	"	KD-X2J (")	1
	"	" -007	"	KD-X2U (")	1
	"	" -008	"	KD-X2G (")	1
	2	VPH2219-001	Cushion	Left, for Unit	1
	3	VPE3005-026	Poly Bag	for Unit	1
	4	" -007	"	for Instruction	1
	5	TKS000501-08	Sheet		1
	6	Q04141H	Wire Clamp	for Power Cord	1
	7	VPZ4001-001	Serial Ticket		1
	8	E66416-003	Envelope	KD-X2J/U (PX, EES)	1
	9	VPH2220-001	Cushion	Right, for Unit	1
	10	VPZ4001-001	Serial Ticket	KD-X2C/J	1

JVC
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